

March 9, 1992

PRELIMINARY ASSESSMENT REPORT
J. F. Frederick Tool Company Incorporated
25 Spring Lane
Farmington, CT.
CTD983876251

INTRODUCTION

The following Preliminary Assessment (PA) complies with the requirements set forth under the EPA Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended. The PA represents the first step in a site screening process set forth by the National Contingency Plan (NCP). It does not necessarily fulfill the requirements of other State and Federal regulations such as RCRA. This work is being completed under Connecticut's Multi-Site Cooperative Agreement (MSCA) with EPA.

A perimeter survey was conducted at J. F. Frederick Tool Company Incorporated, 25 Spring Lane, on April 25, 1991 by Raymond Frigon Jr. with the assistance of Stephen Tartaris, Valarie Pavan, and Gabrielle Caloustian, all of the CT DEP. The weather was sunny and the temperature 65°F. The survey was conducted in accordance with EPA's Preliminary Assessment Policy Paper.

Submitted by:



Raymond Frigon Jr.

Environmental Analyst I
Site Remediation and
Closure Division
Waste Management Bureau



Patrick F. Bowe
Supervising Environmental Analyst
Site Remediation and
Closure Division
Waste Management Bureau

BACKGROUND

Approximately thirty-one (31) industrial sites exist within and adjacent to the Farmington Industrial Park (FIP) located in Farmington and Plainville, Connecticut. Twenty-six (26) of these facilities are within the FIP. Five (5) are located to the northeast and adjacent to the FIP. For the purposes of this assessment report, these facilities will be referred to as being located within the Farmington Industrial Park area (FIP area) (Figure 1).

The four Unionville Water Company wells (FIP wells) and the two Plainville Water Company wells (Johnson Avenue Wells) located within the FIP area are contaminated by chlorinated solvents. The predominant types of chlorinated compounds detected in the groundwater are tetrachloroethylene, trichloroethylene, 1,1,1-trichloroethane, and chloroform. The wells are known to have been impacted since 1975. Many industries have operated or currently operate in the FIP area that may have been involved in the release of these chlorinated solvents.

NUS Corporation (NUS), a U.S. Environmental Protection Agency (EPA) contractor, recently completed Screening Site Inspections (SSI) under CERCLA at sixteen (16) industrial sites within the FIP area. At the time NUS was conducting the SSIs, other industrial sites in the FIP area were being evaluated as potential hazardous waste disposal sites. This site discovery effort by NUS included a perimeter survey of the area on March 8, 1989 and a review of information on file at the Connecticut Department of Environmental Protection (DEP).

As a result of the site discovery effort by NUS and further evaluation by DEP staff, ten (10) additional potential hazardous waste disposal sites have been identified in the FIP area (see Table 1). These ten (10) sites have been entered into the federal superfund database (CERCLIS) and are subject to the federal pre-remedial review process. Preliminary Assessments (PA) are being conducted at each site by the DEP. The J.F. Frederick Tool Company is one of the sites being evaluated.

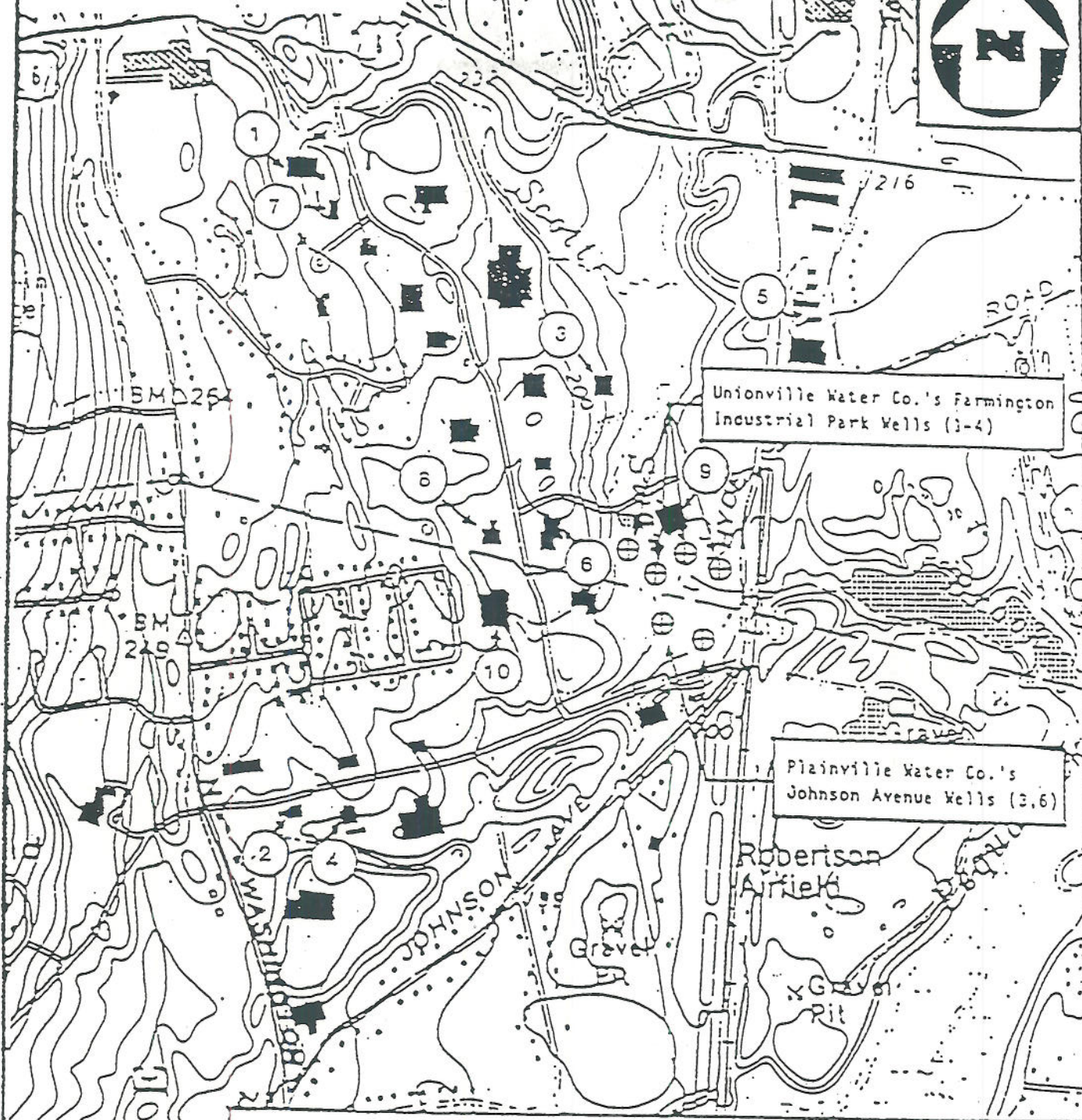
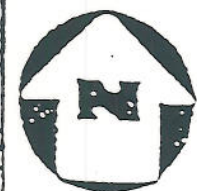
SITE HISTORY/ACTIVITY

The J. F. Frederick Tool Company Incorporated (Frederick) is located at 25 Spring Lane, Farmington, Hartford County, Connecticut (Latitude 41° 42' 11" North, Longitude 72° 52' 26" West)(II.10). Frederick is a manufacturer of small to medium sized aircraft parts and electrodes (II.3).

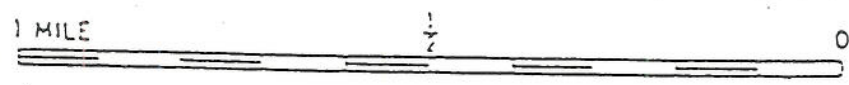
The company is housed in a single building containing the manufacturing areas and office space (figure 2.)(II.3). Since the building was constructed in 1968, Frederick has been the only occupant of the site. The site is situated near the center of a 5.0 acre parcel of land. The property is bordered by Apex Machine and Tool Co. to the North, Spring Lane to the East, Right Lane to the South, and wooded land to the West (VI.2). Access to the site from Spring Lane or Right Lane is unrestricted (VII).

On August 21, 1968, the site property was purchased by Hazel V. Frederick and Joseph F. Frederick. One half interest of the company was purchased by Roger J. Frederick in 1978. Roger J. Frederick became sole owner of the site in 1984 when he purchased the remaining interest from Hazel V. Frederick (VI.1). The present site processes and wastes have remained similar to the original site operations.

Facility names correspond to numbers can be found on Table 1



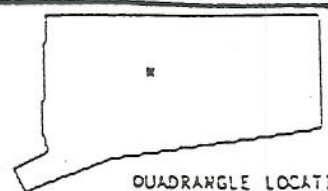
BASE MAP IS A PORTION OF THE FOLLOWING 7.5' U.S.G.S. QUADRANGLES:
 NEW BRITAIN, CT. 1966, PHOTOREVISED 1964; BRISTOL, CT. 1966, PHOTOREVISED 1964.



FACILITIES WITHIN THE FARMINGTON INDUSTRIAL PARK AREA

J.F. Frederick Tool Company Inc. (# 7)

FARMINGTON/PLAINVILLE/CONNECTICUT



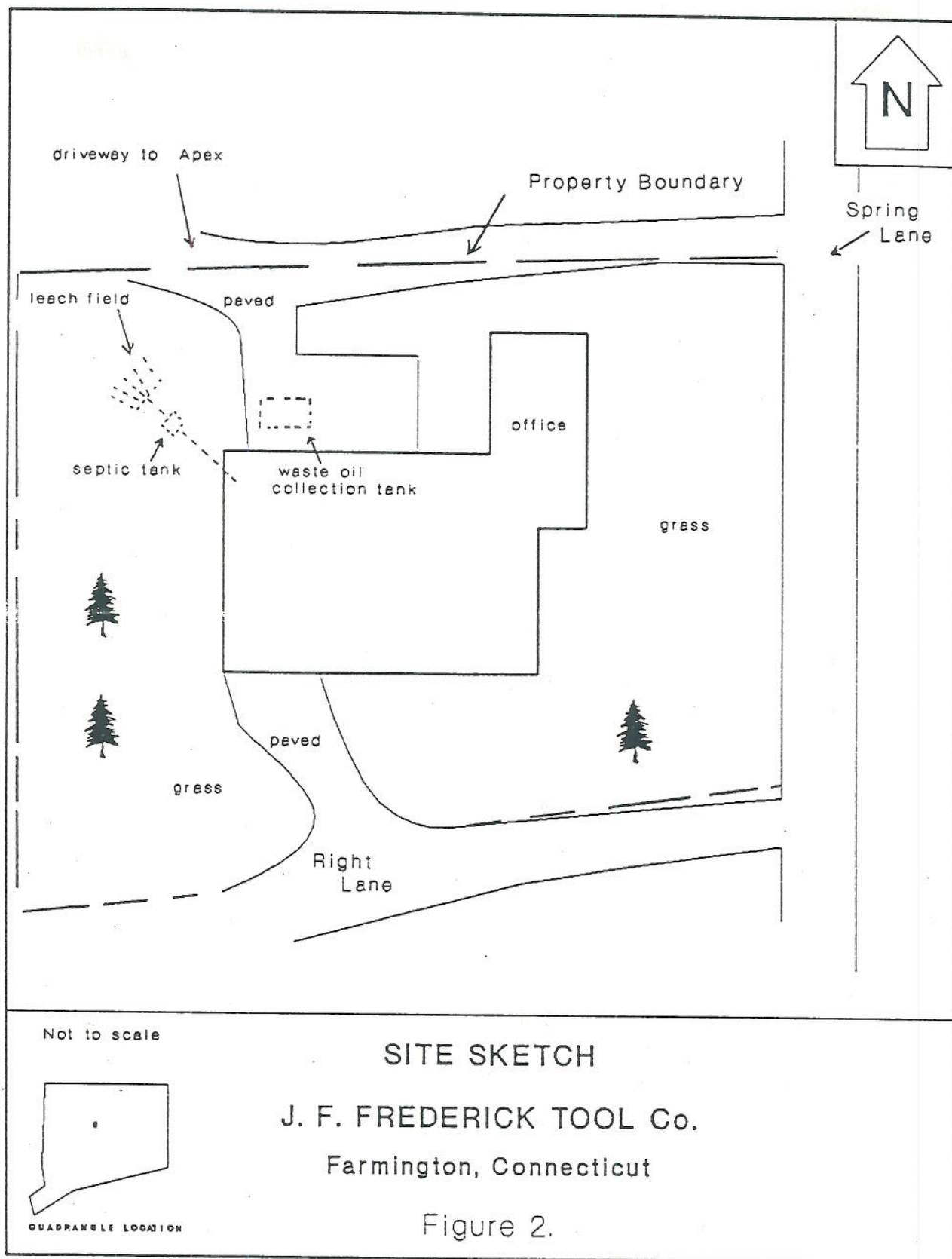
QUADRANGLE LOCATION

FIGURE 1

TABLE 1

Facilities Within the Farmington Industrial Park Area
as depicted in Figure 1

<u>NO.</u>	<u>COMPANY</u>	<u>CERCLIS NO.</u>
1.	Apex Machine Tool Company, Inc.	CID983876228
2.	B & L Tool and Machine Company	CID001150424
3.	Bauer Aerospace, Inc.	CID055506323
4.	Beekley Corporation/Biopolymers, Inc.	CID982547408
5.	Dayon Manufacturing, Inc.	CID980671580
6.	Electronic Coil Corporation	CID983876244
7.	J. F. Frederick Tool Co., Inc.	CID983876251
8.	Omega Corporation	CID983876269
9.	Trumpf Industries, Inc.	CID983874330
10.	Wasley Products, Inc.	CID000844373



The company currently employs approximately 70 people over two shifts, for five days a week (II.5). The site processes and associated wastes are as follows:

General machining: Milling, drilling, and turning is performed on metal parts. Water soluble cutting oil and metal scraps are generated as waste (II.3).

Parts washing: An alkaline cleaner is used to wash metal products. Spent cleaner is generated as a waste (II.3).

Tumbling/deburring: A water and detergent mixture is used to deburr metal parts. A detergent and metal grit mixture is produced as a waste (II.3).

Degreasing: The degreasing operation consists of ten cold dip units. Each unit holds two quarts of 1,1,1-trichloroethane (TCA) as the degreasing agent (II.3).

The CT DEP conducted an inspection of the Frederick site processes in 1970. The inspection report states that the spent alkaline cleaner from the parts washing operation was discharged to a 1,000 gallon holding tank. The contents of the tank are collected and hauled off-site by a private party. The spent solution is recycled to reclaim the cleaning agent. It is not known how often the tank contents are removed, or if the tank is above or below ground (II.4).

Waste oils from general machining were collected in a 2,000 gallon underground storage tank. The contents of the tank are removed by a waste hauler. It is not known how often the tank contents are removed. The age, construction material, and condition of the tank are also unknown (II.5).

Another inspection by the CT DEP in 1980 reported similar site processes and waste disposal practices with the exception of the machining wastes. The 1980 inspection reports that waste oil was mixed with an unknown volume of TCA from the degreasing process. This mixture was disposed of to the 2,000 gallon underground storage tank (II.3).

Prior to 1982, sanitary waste water from the company was discharged to the site septic tank and leach field. In 1982 the company was linked to the municipal sewer system (II.5).

In 1983, the DEP inspected the Frederick site again. The DEP suggested to the site operator that the TCA waste be segregated from the waste oil and manage the TCA as a hazardous waste (I.2.d).

In September 1984, four drums holding 2,400 pounds of waste TCA with cutting oils were manifested and hauled off-site. Another four drums of the same content were manifested and hauled off-site in 1985 and 1986 (I.2.b). The site is not listed on the current Resource Conservation and Recovery Act Information System (RCRIS) database as having hazardous waste activity (I.1).

Interpretation of historical aerial photography performed by the EPA Office of Research and Development did not identify a possible source of contamination originating from the Frederick site. The aerial photo's studied in this report dated back to 1951, and continued to 1986 (V).

A perimeter survey was conducted by the DEP on April 25, 1991. No potential violations of waste management practices were observed during the survey (VII).

ENVIRONMENTAL SETTING

The land use in the FIP area is predominantly industrial with some residential, commercial, and agricultural areas (VII). The topography is defined by gently sloping hills in the center of a northeast trending valley (III.10).

The overburden in the FIP area consists of stratified glacial outwash deposits that are characteristic of a kame terrace. This material generally contains reddish-brown sands and gravels with occasional clay lenses. In the FIP area these surficial materials have been reported to contain light-colored drift that is deposited on top of a ground-moraine. This ground-moraine is reported to be exposed in the vicinity of Scott Swamp Brook, between Scott Swamp Road (a.k.a. Route 6) and Hyde Road (III.5). Well construction log data from FIP wells #3 and #4 indicate clay lenses up to 48 feet thick near the ground surface overlying coarse sands and gravels (I.1.a). The depth to bedrock in the FIP area varies from 12 feet in the north along Scott Swamp Road to over 300 feet in the east near the Pequabuck River along Hyde Road (III.4). The glacial outwash materials fill a bedrock channel carved out of the soft New Haven Arkose sandstone between more durable basalt ridges to the east and west. The New Haven Arkose is a pale reddish-brown to grayish-red, interbedded coarse to fine-grained sandstone which may be more than 3,000 feet thick throughout the formation (III.4).

This central region of Connecticut contains several large fault zones that strike approximately N 50° E, with dip angles near vertical. One fault zone bisects the industrial park just north of Johnson Avenue in Farmington, Connecticut. A large, closed bedrock depression has been mapped as extending as far south as Southington, Connecticut, and as far north as Poplar Swamp in Farmington, Connecticut, and is east to northeast of the FIP area. The base of this depression is approximately 150 feet below mean sea level and as much as 340 feet below the Pequabuck River (III.4). The deepest portions of the depression are located at the point where Route 6 passes over the Pequabuck River. The Frederick site is at an elevation of approximately 250 feet above mean sea level (III.10).

Surface water runoff from the FIP area is generally to the southeast towards Scott Swamp Brook which feeds the Pequabuck River. Catch basin collection systems from parking lots and landscaped lawns also drain into these waterways (I.1.a). The J.F. Frederick Company is located on land that slopes gently to the southeast. Scott Swamp Brook, located 600 feet north of the site, is the closest surface water body to Frederick (III.10). Scott Swamp Brook flows east approximately 0.7 stream miles from the point at which it exits the FIP to its confluence with the Pequabuck river. Scott Swamp Brook is designated as Class B/A surface water (III.15). The Pequabuck River is classified as D/B_c from the town of Bristol to its confluence with the Farmington River. The Pequabuck River, from its confluence Scott Swamp Brook, flows north approximately 3 stream miles into the Farmington River (III.15). From this junction, the Farmington River flows northeasterly until it joins the south-flowing Connecticut River over 15 stream miles away. The Farmington River is designated as Class B_{b,c} surface water. The Connecticut River is Class C/B surface water (III.15). There are no drinking water intakes along the surface water pathway from Scott Swamp Brook to the Connecticut River (III.14/IV). The Pequabuck River is used for boating and fishing and the Farmington River is used for fishing and swimming (I.1.a). For complete water quality classification descriptions refer to Attachment C.

Three surface water samples of Scott Swamp Brook were collected by a CT DEP field inspector on 9/24/87. The sample locations could not be determined from file information. The Connecticut Department of Health Services (CT DOHS) laboratory analysis showed high

concentrations of chlorinated solvents. The highest concentrations reported were 860 micrograms/liter (ppb) Trichloroethylene (TCE), 950 ppb 1,1,1-Trichloroethane (TCA), and 14000 ppb Tetrachloroethylene (PCE) (Attachment D).

According to the CT DEP Natural Resources Center, Shade Swamp is a critical wetland habitat (I.1.a). It is located along the Pequabuck River approximately 2 miles downstream of its confluence with Scott Swamp Brook.

Based on the DEP Natural Diversity Database maps and files, the following endangered or threatened species and species of special concern occur within a 4-mile radius of the FIP:

<u>Species</u>	<u>Date Last Observed</u>	<u>Proposed State Status</u>	<u>Federal Status</u>
<i>Platanthera dilata</i>	1900	Special Concern	
<i>Dicentra canadensis</i>	1987	Threatened	
<i>Lygodium palmatum</i>	1917	Special Concern	
<i>Aplectrum hyemale</i>	1897	Special Concern	
<i>Agalinus acuta</i>	1897	Endangered	Endangered
<i>Vitis novae-angelia</i>	1979	Special Concern	
<i>Hydrophyllum virginianum</i>	1979	Special Concern	
<i>Dryopteris goldiana</i>	1910	Threatened	
<i>Polygala nuttallii</i>	1900	Endangered	

Natural Diversity Database information includes all information regarding critical biological resources available to the DEP Natural Resources Center at the time of the request. This information is a compilation of data collected over the years by the Natural Resource Center's Geological and Natural History Survey and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations.

Reportedly the groundwater in the vicinity of the FIP area mimics the surrounding topography and flows in a southeasterly direction (I.1.a). However, groundwater flow may be affected by the FIP and Johnson Avenue wells, since the wells have a radius of influence which encompasses the FIP area (I.1.a). Groundwater in the FIP area is mapped as Class GB/GA (III.15). The area immediately surrounding the public water supply wells in the FIP is mapped as Class GAA (III.15). A classification of GAA describes groundwater that contributes water, via groundwater flow, to a public water supply well (see Attachment C). The groundwater beneath the area of the Johnson Avenue and Hyde Road junction is at least partially confined by a 20 to 100 foot thick surface layer of swamp deposits. The Johnson Avenue wells draw water from a coarse gravel layer approximately 20 feet thick that lies approximately 110 feet beneath the ground surface. The area west of Scott Swamp Brook serves as the primary recharge zone for the deep gravel deposits (I.1.a).

The two Johnson Avenue wells and the four FIP wells along Hyde Road are the nearest community well supplies which have reported contamination. These six high yield wells are screened in overburden materials at depths of 72 to 110 feet below the ground surface and serve approximately 9,345 people (I.1.a, VIII.2). The two Johnson Avenue wells (#3,#6) are owned and operated by the Plainville Water Company (PWC) and serve approximately 3,645 people (VIII.2). Johnson Avenue well #6 is being pumped and discharged into Scott Swamp Brook with permission from the CT DEP in an effort to reduce the trichloroethylene (TCE) contamination in nearby Johnson Avenue well #3 (IV.2, VIII.2). Johnson Avenue well #3 is currently being monitored monthly and Johnson Avenue well #6 is being monitored weekly for volatile organic compounds (VOC) (IV.2). The four FIP wells are owned and operated by the Unionville Water Company (UWC). The FIP wells serve approximately 5,700 people. Well #4 is currently in use and being monitored monthly for VOCs (VIII.1). If water pressure drops below a minimum level, wells #3, #2, and #1 are brought on-line, respectively, as needed (VIII.1).

The FIP and Johnson Avenue wells are known to have contamination since 1975 (I.1.a). The predominant compounds detected in the groundwater are TCE, 1,1,1-trichloroethane(TCA), tetrachloroethylene (PCE), and chloroform. A summary of historical well monitoring data can be found in Attachment B Tables 1-3.

According to a representative of the Unionville Water Company in Farmington, an application for a well water diversion permit has been submitted to the CT DEP. A groundwater study is presently being conducted by a water company contractor, Groundwater, Inc., as part of this permit application. The study will include an analysis of the effects of the wells on groundwater flow patterns within the area of influence of the wells (VIII.1). The radius of influence encompasses the FIP area.

Table 2 lists community groundwater supply wells within a 4-mile radius of the FIP area as reported in the 1986 CT DEP "Directory of Community Water Systems in Connecticut". A summary of known industrial wells within a 1-mile radius of the FIP area can be found in Attachment A. There are no known private drinking water wells still in use in the FIP area (I.1.a, IV.2). Public water is now being supplied. For approximate locations of community and industrial wells within 1 mile of the FIP area refer to Figure 3.

Municipal sanitary sewers were introduced into the FIP area in the early 1970's (VI). Most of the industrial sites within the FIP area currently discharge sanitary and industrial wastewaters to the municipal sanitary sewer system.

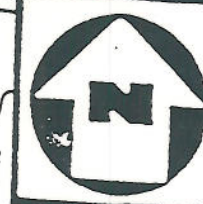
The following cities/towns and their populations are located within a 4-mile radius of the FIP area (III.7,8,10). Only small portions of Burlington, New Britain, Southington, and Unionville and their populations are within the 4-mile radius.

<u>City/Town</u>	<u>Population</u>
Bristol	57,426
Burlington	5,466
Farmington	11,299
Unionville	11,424
New Britain	73,903
Plainville	17,500
Southington	<u>27,992</u>
Total	205,010

LEGEND

- ⊕ = Screened in bedrock
- ⊖ = Screened in overburden
- ⊙ = Screened interval unknown
- ⊗ = Abandoned well (overburden)
- ⊘ = Abandoned well (bedrock)

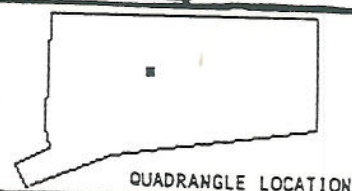
Lettered Wells Correspond to
Table 2 and Attachment A.



BASE MAP IS A PORTION OF THE FOLLOWING 7.5' U.S.G.S. QUADRANGLE(S):
NEW BRITAIN, CT. 1966, PHOTOREVISED 1984; BRISTOL, CT. 1966, PHOTOREVISED 1984.

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

COMMUNITY AND INDUSTRIAL WELLS
WITHIN 1 MILE OF THE FIP CENTER



QUADRANGLE LOCATION

FIGURE 3

TABLE 2

Groundwater Supply Wells Within 4 Miles of The FIP Area

<u>Well</u>	<u>Ownership/Use</u>	<u>Approximate Distance/Direction</u>	<u># of Wells</u>	<u>Population Served</u>	<u>Screened Interval</u>
Johnson Ave. A	Plainville Water Co./ Community and Industrial	<.10 E	2	3,645	overburden
FIP B	Unionville Water Company/ Community and Industrial	<.10 E	4	5,700	overburden
Wells Acre C	Unionville Water Co./Community	.80 NW	1	244	bedrock
Cope Manor	Private/Community	1.4 SW	1	84	bedrock
Winthrop Drive Duplexes	Private/Community	1.4 NW	1	unknown	unknown
Woodford Ave.	Plainville Water Co./ Community	1.8 SE	2	10,935	unknown
Farmington Res.	Unionville Water Co./ Community	2.5 NE	2	11,000	unknown
White Bridge	New Britain Water Dept./Community	2.5 W	2	18,135 (mixed with surface water)	unknown
Mix Street	Bristol Water Dept./ Community	2.5 & 2.9 W	4	52,328	overburden
Angelo Tomasso, Inc.	Private/Community	2.9 SE	3	unknown	unknown
Lakeview Apts.	Unionville Water Co./ Community	2.9 N	2	642	bedrock
Farmington Line West Association	Private/Community	3.2 NW	1	51	unknown
Woodcrest Association Inc.	Private/Community	3.2 NW	1	60	unknown

Forest Hills Mobile Home Park (Jensens)	Private/Community	4.1 SSW	3	380	unknown
No. 1 & No. 2	Unionville Water Co./ Community	4.8 N	2	2,500	unknown

NOTE: The above information was obtained from the CT DEP 1986 "Directory of Community Water Systems in Connecticut", publication. The distances have been measured from a central point located within FIP. This central point was determined by drawing a circle of smallest circumference that completely enclosed all the properties included as part of the FIP investigation, and, using the center of this circle as the center of the Farmington Industrial Park Area. Wells identified with a letter are wells located within a 1 mile radius of the FIP center and correlate with information in Attachment A (Figure 3).

The following table is an estimate of private well users within each specified distance ring.

PRIVATE WELL USERS

Radial Distance from Frederick (miles)	Approximate Population Served by Private Well
0.00 - 0.25	0
0.25 - 0.50	0
0.50 - 1.00	5,32
1.00 - 2.00	1,472
2.00 - 3.00	2,694
3.00 - 4.00	4,261
Total	8,959

In November, 1982 the CT DEP met with thirteen companies located within the FIP (I.1.a). The CT DEP requested that the companies conduct a groundwater study in a collective effort. The study was not a requirement of a DEP administrative enforcement action. Due to the unwillingness of some of the companies to participate, the study was never conducted.

CONCLUSIONS AND RECOMMENDATIONS

The J. F. Frederick Tool Company Inc. is a manufacturer of small to medium size aircraft parts and electrodes. Frederick has been the only occupant of the site. An inspection of the site by the CT DEP in 1980 reported waste oil mixed with an unknown volume of 1,1,1-Trichloroethane. The mixture was disposed of to a 2,000 gallon underground storage tank. The practice of mixing the two wastes has ceased. The waste 1,1,1-Trichloroethane is now being manifested from the site separately.

Due to the presence of chlorinated compounds in nearby public drinking water supplies, and since Frederick is a generator and handler of waste 1,1,1-Trichloroethane which is one of the compounds found in nearby public drinking water supplies, it is recommended that continued investigative work under CERCLA be conducted at J.F. Frederick Tool Company.

REFERENCES

I. CT DEP Waste Management Bureau

1. Site Remediation and Closure Division Files

- a. Final Screening Site Inspection. Mott Metallurgical Company. 8/2/90.

2. Waste Engineering & Enforcement Files

- a. CT DEP. 1986. Hazardous Waste Management Section. Manifest Program. April 25.
- b. CT DEP. 1986. Hazardous Waste Management Section Hazardous Waste Manifest Section. March 24.
- c. Demers. D. 1990, (NUS Corporation) Letter to Don Smith (U.S. Environmental Protection Agency) RE: Farmington/Plainville Site Discovery. February 2.
- d. CT DEP, 1983. Hazardous Waste Inspection Checklist. January 7.

II. CT DEP Water Management Bureau Files

- 1. Letter Minges Environmental Laboratory to Roys Machinery & Sales. RE: Purgeable organics survey from wells along New Britain Avenue. 4/5/83.
- 2. TRC Environmental Consultants. Hydrogeologic Investigation Report - Connecticut Spring & Stamping Corp. 9/28/88.
- 3. Aschenbach. 1980. (CT DEP). Form P-5. February 19.
- 4. Senack, R. W. 1970. (CT DEP). Water Resources Commission. Form P-5. December 4.
- 5. Melvin, R.S. 1989 (CT DEP). Memo To File. RE: J. F. Fredericks Tool Company.
- 6. Laboratory results of surface water samples collected by R. Melvin. 9/24/87.

III. CT DEP Natural Resources Center

- 1. Atlas of Public Water Supply Sources and Drainage Basins of Connecticut. 6/82.
- 2. Directory of Community Water Supplies in Connecticut. 8/86.
- 3. Community Water Systems in Connecticut, a 1984 Inventory. CT Natural Resources Center. 1986.
- 4. Bedrock Map, New Britain Quadrangle. USGS Map MF-523C. 1975.
- 5. Surficial Geology Map, New Britain Quadrangle. USGS Map GQ-119. 1959.
- 6. Hydrogeologic Data for the Farmington River Basin. Connecticut Water Resources Bulletin No. 28. 1975.
- 7. USGS Topographic Map, Avon Quadrangle. 1957. Photorevised in 1984.

REFERENCES (con't)

8. USGS Topographic Map, Bristol Quadrangle. 1966. Photorevised in 1984.
9. USGS Topographic Map, Hartford North Quadrangle. 1966. Photorevised in 1984.
10. USGS Topographic Map, New Britain Quadrangle. 1966. Photorevised in 1984.
11. USGS Topographic Map, Tarrifville Quadrangle. 1956. Photorevised in 1970.
12. USGS Topographic Map, Windsor Locks Quadrangle. 1966. Photorevised in 1984.
13. Memo N. Murray. RE: Natural Diversity Database. 1/25/91.
14. Telecon M. Blais (CT DEP) with H. Sternberg (CT DEP). RE: Surface water intakes. 6/91.
15. Water Quality Classification Map of Connecticut. 1987.

IV. CT Department of Health Services

1. Letter L. DeJong (BHC) to M. Hage (DOHS). RE: Plainville Water Co., Gros-ite Industries, Inc.
2. Telecon S. Tartaris (CT DEP) with J. Czaja (DOHS). RE: Current Well Status. 2/6/91.
3. Telecon M. Blais (CT DEP) with P. Scully (DOHS). RE: Surface water intakes. 6/91.

V. U.S. EPA Files

1. Site Analysis Farmington Industrial Park. TS-PIC-90009. June 1990.

VI. Farmington Town Hall

1. Tax Assessor's Records
2. Farmington Land Records.

VII. Perimeter Survey conducted April 25, 1991.

VIII. Other.

1. Meeting with a representative of the Unionville Water Company. 2/91.
2. Telecon S. Tartaris (CT DEP) with M. Picone (Plainville Water Co.). RE: Current Status of Woodford Avenue Wells. 8/20/91.

ATTACHMENT A

KNOWN PRIVATE INDUSTRIAL WELLS WITHIN A 1 MILE RADIUS OF THE FIP CENTER

ATTACHMENT A
KNOWN PRIVATE INDUSTRIAL WELLS WITHIN A 1 MILE RADIUS OF THE FIP CENTER

<u>Company Name</u>	<u>Date Well Constructed</u>	<u>Depth</u>	<u>Yield</u>	<u>Well Status</u>	<u>Sampling Conducted</u>	<u>Investigating Organization</u>
Mott Metallurgical Co. (1) D	1968	160 feet	N/A	Never connected to building.	Yes	CT DEP-1989 NUS/FIT-1989
American Research (2) E	1956	632 feet	30 gpm @ 165 feet 75 gpm @ 632 feet	Town DOH ordered well plugged in 1988.	Yes	Minges Env.-1983 CT DEP-1983
Gros-ite/Whitnon-Spindle (2) F	1955	438 feet	Est. 60-85 gpm.	Not in use for 21 years. Well pumped to waste for 3 days before test by Minges.	Yes	Minges Env.-1983 CT DEP-1983
Connecticut Spring and Stamping (3) G	1979	330 feet	150 gpm.	Currently in use for A/C water; cooling and process water on emergency basis.	Yes	TRC Env. Consultants-1988
Roy Machinery (Woods Electrical) (2) H	1957-1958	24-26 feet	Less than 5 gpm.	Ordered not to use after sampling by NUS/FIT & CT DEP detected tetrachloroethylene in 1989.	Yes	Minges Env.-1983 NUS/FIT-1989 CT DEP-1989
Ken/M&A Construction (2) I	N/A	416 feet	N/A	In use	Yes	Minges Env.-1983 CT DEP-1989
Tri-D Corp (4) J	1966	280 feet	22 gpm.	N/A	N/A	N/A

Note: Letters following company name correlate with Figure 3.

REFERENCE:

- (1) NUS/FIT 1990
- (2) Minges. 1983
- (3) TRC. 1988
- (4) CT DEP. 1975.

TABLE 1
PLAINVILLE WATER COMPANY/JOHNSON AVENUE WELL DATA

Date	Johnson Avenue Well #3			Johnson Avenue Well #6		
	TCA	TCE	PCE	TCA	TCE	PCE
1/14/86	30.9	3.8	4.7	3.3	11.7	ND
2/26/86	33	ND	ND	ND	23	3.9
3/17/86				1.6	18.4	ND
3/27/86	14.9	3.5	3.8	2.1	12.1	1.3
4/1/86	21.3	5.3	6.2	2.3	11.7	ND
4/18/86	28.4	ND	ND	ND	22.9	ND
5/14/86	36	2.5	3	2.3	13	ND
8/6/86	30.5	4.5	4.9	2.1	26.4	ND
12/22/86	53	5.2	14	7.6	9.8	5.8
2/10/87	23.9	2	12.7	ND	19.5	ND
3/10/87	24.6	2.4	15.2	ND	9.7	ND
8/11/87	16	2.2	4.5	3.8	19.3	2.2
10/6/87	16	ND	2.9	2	22	ND
12/1/87	23.6	2.9	6.8	2.1	21.4	ND
1/5/88	22.7	1.9	4.6	ND	19.5	ND
1/26/88	19.7	2.3	4.9	2.1	23.2	ND
2/22/88	16.2	ND	4.3	ND	18.1	ND
3/29/88	13.8	ND	3.9	ND	25.3	ND
4/19/88	2	24	ND	12.8	2	4.9
5/12/88	13.5	ND	4.1	ND	41	ND
6/14/88	17.2	2.1	5.5	2.5	28	ND
9/6/88				2.7	34.8	ND
10/4/88	17.9	2.4	6.2	4.5	2.6	ND
11/29/88	9.9	2	ND	2.5	21.6	ND
1/17/89	9.7	ND	ND			
1/24/89	3.8	1.6	ND			
1/31/89	11.8	22.6	10.2			
2/7/89	10.9	22.2	9.9			
2/14/89	9.4	9.9	4.3			
2/21/89	10.3	9.5	3.6			
3/14/89	10.9	2.2	4.2	2	18.5	ND
3/21/89	13	3.1	16.9	2.2	25.9	ND
5/16/89	14.3	2.1	4			
11/7/89	17.2	2.8	5.7	6.7	17.3	2.3
12/5/89	11.4	2.3	4.1	3.9	16.7	3.9
1/2/90	14.8	2.3	4.8	4.9	18.2	2.3
2/6/90	4.9	ND	1.4	4	12	1.8
2/13/90	11.8	2.1	3.6	3.6	15.3	1.7
2/20/90				7.8	28	3.5
3/6/90				4.8	14.5	2.6
3/13/90	12.6	1.7	3.1	3.6	11.2	1.8
3/20/90				4.9	14.1	2.5
3/27/90				4.7	15.0	2.5
4/3/90	21.0	4.8	4.6			
4/10/90				5.5	12.9	2.3
4/17/90				9.4	16.9	4.1
4/24/90				10.0	16.7	3.7
5/1/90	18.6	2.6	6.2	9.1	19.0	3.5
5/8/90				8.9	11.5	3.3
5/15/90	13.7	2.4	4.5	5.0	15.8	2.2
5/22/90				5.8	13.8	2.5
6/5/90				4.7	15.2	2.6
6/12/90	12.8	1.5	8.5	7.2	11.7	4.5
6/19/90				3.5	6.3	ND
6/26/90				2.6	7.3	ND
7/10/90	13.1	1.7	3.5	3.1	15.3	ND
7/17/90				2.1	12.3	ND

ATTACHMENT B

JOHNSON AVENUE AND FIP HISTORICAL WELL DATA

Table 1 - Plainville Water Company/Johnson Avenue Well Data

Table 2 - Unionville Water Company/FIP Well Data

Table 3 - Unionville Water Company/FIT Wells 3 & 4 (blend)

TABLE 1
PLAINVILLE WATER COMPANY/JOHNSON AVENUE WELL DATA

Date	Johnson Avenue Well #3			Johnson Avenue Well #6		
	TCA	TCE	PCE	TCA	TCE	PCE
7/24/90				5.5	53.5	6.4
7/31/90	22.0	3.3	6.8	4.3	49.8	4.4
8/7/90				3.0	30.2	2.2
8/14/90	19.0	3.3	17.2	ND	2.8	ND
8/21/90				3.8	30.5	2.5
8/28/90				3.3	30.4	3.2
9/4/90				4.4	42.5	3.6
9/11/90				ND	44.6	3.7
9/18/90	21.8	2.6	21.0	3.2	16.5	3.1
9/25/90				ND	41.2	3.7
10/2/90	16.0	3.0	ND			
10/9/90	13.6	2.1	4.8	4.0	16.4	1.0
10/16/90	10.0	ND	ND			
11/6/90	9.5	ND	ND			

Concentrations reported in parts per billion (ppb)

ND = Not detected

TCA = 1,1,1 Trichloroethane

TCE = Trichlorethylene

PCE = Tetrachlorethylene

REFERENCES

Connecticut Department of Health Services. 1989. Summary of Organohalides detected in Johnson Avenue Wells #3 & #6. 1/14/86 - 1/31/89.

Connecticut Department of Health Services. 1990. Summary of Organohalides detected in Johnson Avenue Wells #3 & #6. 12/22/86 - 11/6/90.

TABLE 2
UNIONVILLE WATER COMPANY/FIP WELL DATA

	TCA	TCE	PCE	CHC13
FIP Well #1				
6/2/75	ND	200	ND	20
3/28/88	63	4.6	3.8	
FIP Well #2				
6/2/75	ND	85	160	60
3/31/88	21	3.2	14	
FIP Well #3				
6/2/75	ND	36	73	97
1/16/80	18	1	5	ND
3/20/80	46	1.7	6.1	ND
4/1/80	46	1.4	8.2	ND
4/8/88	8.4	1.3	3.2	
2/28/90	6.9	1	1.6	
4/18/90	9.3	0.52	0.65	
FIP Well #4				
6/2/75	ND	53	640	77
1/16/80	18	1	74	ND
2/22/80	15	1.5	14	ND
2/29/80	25	1.7	20	1.8
3/4/80	13	1.7	17	ND
3/13/80	17	1.9	18	D
4/15/88	8.7	1.3	3.2	
3/28/90	6	1	2.4	
5/31/90	5.3	0.97	2.2	
6/27/90	8.4	1.3	2.2	
7/24/90	8.0	1.2	2.0	
8/31/90	11	1.0	1.4	
9/25/90	9.9	0.74	1.4	
2/8/91	8.5	0.97	1.5	ND

Concentrations reported in parts per billion (ppb)

ND = Not Detected D = Detected, not quantified

TCA = 1,1,1 Trichloroethane PCE = Tetrachloroethylene

TCE = Trichloroethylene CHC13 = Chloroform

REFERENCES

Averill Environmental Laboratories, Inc. 1991. Laboratory Results, FIP well # 4, Sample collected February 5.

Connecticut State Department of Health. 1990. Summary of Organohalides detected in FIP Wells #1, 2, 3, & 4. 1/5/87 - 9/25/90.

Connecticut State Department of Health. 1980. Laboratory Results, FIP Well #3, samples collected 1/16/80, 3/20/80, and 4/1/80.

Connecticut State Department of Health. 1980. Laboratory Results, FIP Well #4, samples collected 1/16/80, 2/22/80, 2/29/80, 3/4/80, and 3/13/80.

Connecticut State Department of Health. Laboratory Division. 1975. Report of Laboratory Examination. Samples collected from FIP Wells #1, 2, 3, & 4. June 2.

TABLE 3
Unionville Water Company/FIP Wells 3 & 4 (blend)

Date	TCA	TCE	PCE
1/3/83	29.5	0.6	3.4
2/1/83	22	0.9	5.6
3/1/83	36	0.6	5.3
4/4/83	23.8	0.9	5.3
5/2/83	22	1.8	4.7
6/1/83	13.3	4.2	19
7/6/83	36	6.5	14.5
8/2/83	38	2	5.1
9/1/83	72	4.4	192
10/3/83	101	4.7	6.25
11/1/83	89.5	3.1	5.9
11/14/83	42.6	2	1.7
12/5/83	34.6	1.3	5.2
1/3/84	35.2	1.9	2.7
2/1/84	23.9	1.6	4.8
3/1/84	15	ND	4.4
5/1/84	19.6	2	7.5
6/6/84	18.7	ND	4.4
7/2/84	31.6	1.2	1.8
8/1/84	46.3	4.5	2.5
9/4/84	28.1	3	3
10/1/84	20.5	2.7	1.1
11/1/84	40.5	ND	7.1
12/14/84	21.5	1.6	5.2
1/2/85	16.5	1	3.3
2/4/85	14	2.6	2.2
3/1/85	23.7	2.3	4
4/25/85	8.9	1.8	3.1
5/2/85	20.8	3	3.6
6/3/85	33	5.1	5.6
7/1/85	ND	ND	1.3
8/5/85	32.8	4.6	1.1
9/3/85	24.3	5.1	4.1
10/2/85	29.8	5.5	3
11/8/85	23.4	4.6	3
12/2/85	9.8	ND	ND

Concentrations reported in parts per billion (ppb)

ND = Not Detected

D = Detected, not quantified

TCA = 1,1,1 Trichloroethane

TCE = Trichloroethylene

PCE = Tetrachloroethylene

REFERENCE

Griswold and Fuss Environmental Laboratories, Inc. 1983 - 1985. Laboratory Results for samples collected 1/3/83 - 12/2/85. January 11, 1983 - December 11, 1985.

ATTACHMENT C

Water Quality Classification Descriptions

CLASS A

Class A surface waters are high quality surface waters designated for use as a potential public water supply, fish and wildlife habitat, recreational use, agricultural use, industrial supply, and other legitimate uses, including navigation. The State's goal is to maintain existing high quality, natural conditions. Similar to Class AA waters, wastewater discharges to Class A resources are prohibited, except for treated backwash from public drinking water supply treatment facilities, minor cooling waters, or clean water.

Whereas, Class A describes surface water quality that is known or presumed to meet all water quality objectives, a classification of B/A describes surface water quality that is threatened by a source of pollution. A classification of C/A describes surface water quality that is definitely impacted by pollution and therefore may have limited suitability for certain fish, wildlife, or recreational use such as swimming. The State's goal for both B/A and C/A classifications is to achieve and maintain Class A water quality conditions.

In cases where there is documented groundwater contamination and the appropriate remedial measures involve pumping and treatment of contaminated groundwater, DEP may authorize a temporary discharge permit (pursuant Section 22a-430, C.G.S.), to Class A waters. The permit could only be issued on determining that the discharge is "clean water" and all designated uses of the surface waters would not be adversely impacted by the treated discharge.

(Reference: Water Quality Standards. State of Connecticut Department of Environmental Protection Water Compliance Unit, February 1987.)

CLASS B

Class B surface waters have designated uses that include recreational use, fish and wildlife habitat, agricultural use and industrial supply and other legitimate uses including navigation. Wastewater discharges to Class B resources may include treated backwash from drinking water treatment facilities, minor cooling waters, clean water such as stormwater discharges, and major and minor discharges from municipal and industrial wastewater treatment facilities, and leachate discharges from permitted waste disposal activities.

Use of the subscript _b, as in B_b, means swimming is, or should be restricted due to sanitary conditions. Use of the Subscript _c, as in B_c, means the waters are utilized by cold water fisheries.

Whereas, a Class B, Bb, or Bc describes surface water quality that is known or presumed to meet all Class B quality objectives, a classification of C/B describes surface water quality that is definitely impacted by a source of pollution and therefore may have limited suitability for certain fish, wildlife, or recreational use such as swimming. A classification of D/B describes surface waters where present conditions severely inhibit or preclude one or more designated uses. The State's goal for both C/B and D/B classifications is to achieve and maintain Class B water quality conditions.

(Reference: Water Quality Standards. State of Connecticut Department of Environmental Protection Water Compliance Unit, February 1987.)

CLASS GAA

Class GAA represents high quality groundwater that is an existing or planned public drinking water supply. Class GAA resources are presumed to be suitable for direct human consumption without prior treatment. A classification of GAA describes groundwater which is either in the watershed of a public water supply reservoir, or groundwater that contributes water, via groundwater flow, to a public water supply well.

In Class GAA resources, discharges of non-human or animal origin are strictly prohibited. Permits may be granted for discharges from septic systems for domestic wastes, wastes from acceptable agricultural practices, backwash discharges from public drinking water treatment systems, and other minor cooling or clean water discharges.

Whereas Class GAA resources should be of high quality and natural conditions, a classification of GB/GAA describes an area where groundwater may not be suitable for drinking without treatment due to a known or suspected source of pollution. The State's goal in these areas is to restore groundwater to Class GAA conditions.

(Reference: State of Connecticut. 1987. Water Quality Standards. Department of Environmental Protection Water Compliance Unit, Hartford, Connecticut.)

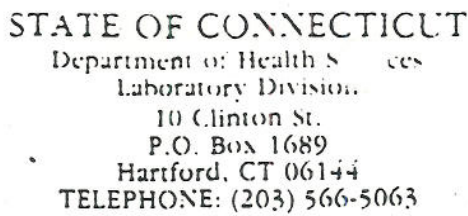
CLASS GA

Class GA represents known or presumed high quality groundwater suitable for private potable water supply. Class GA also may be potential sources of future public water supply. In Class GA resources, wastewater discharges of non-human or animal origin are strictly precluded. Permits may be granted for those discharges permitted in Class GAA areas and for septage disposal, or disposal of other wastes of predominantly human, or natural origin.

Whereas, Class GA groundwater is presumed to be suitable for direct human consumption without prior treatment, a classification of GB/GA describes groundwater known or presumed to be contaminated due to existing activities which pose a threat to groundwater quality. The State's goal for these areas is to restore groundwater to drinking water quality conditions.

(Reference: State of Connecticut. 1987. Water Quality Standards. Department of Environmental Protection Water Compliance Unit, Hartford, Connecticut.)

ATTACHMENT D
Scott Swamp Surface Water Sample Results



MISC.
DEP/LAND DISPOSAL
WATER COMPLIANCE
122 WASHINGTON
HARTFORD CT 06106

Y. C. CL-6A

STATE OF CONNECTICUT

Department of Health Services
Laboratory Division
10 Clinton St.
P.O. Box 1689
Hartford, CT 06144
TELEPHONE: (203) 566-5063

MISC.
DEP/LAND DISPOSAL
WATER COMPLIANCE
122 WASHINGTON
HARTFORD

CT 06106

ID	ACCESSION NO.	ACCOUNT NO.	ROUTE	PAGE
NR:3	16073922	A01081		
INFORMATION				
FARMINGTON				
SCOTT SWAMP BROOK				
FARMINGTON				
COLLECTED		RECEIVED	REPORTED	
09/24/87 11:45		09/24/87 10:54	09/30/87 08:36	

PORT: FINAL REPORT

COMMENT:

SCOTT SWAM SUR. WATER

[illegible]

U.S. OLS-6A



MISC.
DEP/LAND DISPOSAL
WATER COMPLIANCE
122 WASHINGTON
HARTFORD

CT 06106

10

ACCESSION NO.

ACCOUNT NO.

1 ROUTE PAGE

NR: C

165. 3923

AC1081

INFORMATION

FARMINGTON
SCOTT SWAMP BROOK

FARMINGTON

COLLECTED	RECEIVED	REPORTED
09/24/87	09/24/87	09/30/8
11:52	10:55	08:45

REPORT:

FINAL REPORT

COMMENT:

SCOTT SWAM SUR. WATER

RECEIVED
OCT 5 1987
WATER COMPLIANCE